

Appendix B

Technical Specifications for Test Area North, Waste Area Group 1, Remedial Design, Remedial Action, Operable Unit 1-10, Group 1 Sites

Specification Titles

Specification	Title
01000	Definitions
02110	Clearing and Grubbing
02140	Temporary Diversion and Control of Water During Construction
02200	Earthwork
02210	Grades, Lines, and Levels
02222	Excavation, Trenching, and Backfilling
02930	Reclamation Seeding and Mulching

SECTION 01000

DEFINITIONS

General Conditions	General Terms and Conditions for Construction Subcontractors on the Idaho National Engineering and Environmental Laboratory with Parsons Infrastructure & Technology Group, Inc. January 1996.
Operating Contractor	INEEL M&O Contractor
RD/RA Contractor	Defined RD/RA Contractor

SECTION 02110

CLEARING AND GRUBBING

PART 1 GENERAL

1.1 SCOPE OF WORK

1.1.1 Work Included

The subcontractor will furnish all materials, labor, tools, and equipment, and will perform clearing and grubbing during construction activities in accordance with this specification.

1.1.2 Related Work Specified Elsewhere

- (a) Temporary Diversion and Control of Water During Construction will be in accordance with Section 02140 of these specifications
- (b) Excavation, Trenching, and Backfilling will be in accordance with Section 02222 of these specifications
- (c) Earthwork will be in accordance with Section 02200 of these specifications
- (d) Reclamation Seeding and Mulching will be in accordance with Section 02930 of these specifications.

1.1.3 Work to be Performed by Others

The contractor will:

- (a) Review and approve data submittals as required by this specification
- (b) Designate items that require salvage, storage, reuse, and/or relocation
- (c) Perform final inspection and confirm acceptance of clearing and grubbing
- (d) In addition to inspection by the subcontractor, the contractor may inspect work for compliance with the requirements of this specification.

1.2 REFERENCE DOCUMENTS

- (a) Health and Safety Plan (HASP) for the Remedial Action of Waste Area Group 1, Operable Unit 1-10
- (b) M&O Contractor Hazards Prevention and Control Document PRD-24
- (c) Comprehensive Remedial Design/Remedial Action Work Plan for the Test Area North Operable Unit 1-10, Selected Sites.

1.3 SUBMITTALS

1.3.1 Procedures

The subcontractor will submit a description of materials and/or methods of clearing and grubbing in accordance with the requirements of this specification to the contractor for approval within eight work days after notice to proceed.

1.3.2 Certifications

The subcontractor will submit a letter to the contractor verifying conformance to the requirements identified in this specification within four work days after completion of the work specified herein.

1.3.3 Records

The subcontractor will submit all records of inspection to the contractor, within four work days after completion of the inspection.

PART 2 PRODUCTS

2.1 EQUIPMENT AND MATERIAL REQUIREMENTS

2.1.1 Equipment

- (a) The subcontractor will ensure that all equipment used for clearing and grubbing work is fitted with appropriate safety devices that comply with all applicable federal laws and the Project Health and Safety Plan (HASP), and that will adequately protect the operator and minimize exposure of workers and others.
- (b) All equipment and tools used by the subcontractor to perform the work will be subject to inspection by the contractor before the work is started and will be maintained in satisfactory working condition at all times.
- (c) The subcontractor's equipment will have the capability to perform the indicated clearing and grubbing specified herein.

2.2 ITEMS SALVAGED FOR REUSE, STORAGE, OR RELOCATION

The contractor will designate items that require reuse, storage, or relocation. The subcontractor will properly dispose of all signs in accordance with the contract General Conditions GC-16 and GC-17.

PART 3 EXECUTION

3.1 GENERAL

3.1.1 Site Inspection

The subcontractor will inspect the site to determine the nature, location, size, and extent of vegetative material, debris, and obstructions to be removed or preserved, as specified herein.

3.1.2 Protection and Safety

The subcontractor will provide all necessary protection measures per the standards established by INEEL PRD-24.

3.1.3 Traffic

The subcontractor will conduct clearing and grubbing operations to ensure minimum interference with roads, walks, and adjacent facilities. The subcontractor will not close or obstruct roads, walks, or adjacent operational facilities without written permission from the contractor.

3.1.4 Protection of Existing Structures and Facilities

The subcontractor will provide protection necessary to prevent damage to the existing structures and facilities which are to remain in place. The subcontractor will restore or replace damaged property to original condition, or to the satisfaction of the contractor. Items damaged in removal will be repaired and refinished, or replaced by the subcontractor with new matching items as required by the contractor.

3.1.5 Salvageable Items

Items damaged in removal will be repaired, refinished, or replaced by the subcontractor with new matching items as required by the contractor. The subcontractor will save and protect from construction damage all vegetative materials (trees, shrubs, grass, and other vegetation) beyond the limits of the required clearing and grubbing. The subcontractor will restore or replace damaged vegetative materials to the conditions as required by the contractor, in accordance with Section 02930 of these specifications.

3.1.6 Protection of Monuments and Other Pertinent Surface Features

The subcontractor will locate and mark existing monuments, monitoring wells, guard posts, and markers before construction operations commence and will protect such items during construction. The subcontractor will restore or replace damaged items to original condition as required by the contractor.

3.1.7 Dust Control

The subcontractor will at all times minimize the creation and emission of dust. The subcontractor will employ means such as water spray and visual observation to control and minimize dust. The source of water for dust suppression will be specified in the Request for Proposal, Special Conditions.

3.2 CLEARING AND GRUBBING

3.2.1 Clearing and Grubbing

The subcontractor will clear the site of shrubs, vegetation, and debris to the limits of the soil excavations. Stumps, roots exceeding 1-inch in diameter, and other debris exceeding 6-inches in diameter in the top 3-inches of the existing grade will be removed by hand or mechanical means. Removal methods will minimize the disturbance of soils below

3-inches in depth. The subcontractor will follow the requirements of the HASP in determining the appropriate personal protective equipment (PPE) and material handling requirements of possible contaminated soils and vegetation.

3.2.2 Reclamation Seeding and Mulching

The subcontractor will seed and mulch disturbed areas in accordance with Section 02930 of these specifications.

3.3 INSPECTIONS DISPOSAL OF WASTE AND DEBRIS MATERIALS

3.3.1 Organic Materials

Organic materials, including grass, shrubs, stumps, roots, and other organic debris removed due to clearing activities, will be transported by the subcontractor to an INEEL disposal site. Organic material removed from radiological controlled areas will be surveyed and released by the contractor prior to disposal. The subcontractor will construct stockpiles with surface water runoff controls, in accordance with Section 02140 of these specifications. The subcontractor will protect stockpiles to prevent excessive wind and water erosion.

3.3.2 Disposal

The subcontractor will remove all materials not designated for relocation, reuse, or salvage. These materials will be disposed of as per the Special Conditions.

3.4 DAMAGED AREAS

The subcontractor will confine clearing and grubbing operations to within those areas required for construction of engineered barriers or native soil covers, borrow areas, or as directed by the contractor. Any areas outside the designated areas that are damaged or disturbed by the subcontractor's operations will be reclaimed by the subcontractor. Reclamation will be in accordance with Section 02930 of these specifications.

3.5 ACCEPTANCE

Clearing and grubbing not in accordance with the requirements of this specification will be repaired and/or replaced by the subcontractor at the subcontractor's expense. The subcontractor will submit a description of the repair and/or replacement methods to the contractor for approval before use. Acceptance criteria for repaired and/or replaced clearing and grubbing will be in accordance with the original requirements of this specification.

END OF SECTION

SECTION 02140

TEMPORARY DIVERSION AND CONTROL OF WATER DURING CONSTRUCTION

PART 1 GENERAL

1.1 SCOPE OF WORK

1.1.1 Work Included

The subcontractor will furnish all materials, labor, tools, and equipment for dewatering work areas and controlling surface water prior to and throughout construction operations. Control measures implemented may include berms, swales, ditches, temporary piles, portable pumps, silt fences, sediment traps, or any other measure approved by the contractor in accordance with this specification and as shown on the design drawings.

1.1.2 Related Work Specified Elsewhere

- (a) Earthwork will be in accordance with Section 02200 of these specifications
- (b) Reclamation Seeding and Mulching will be in accordance with Section 02930 of these specifications.

1.1.3 Work to be Performed by Others

The contractor will:

- (a) Review and approve data submittals as required by this specification
- (b) Inspect work for compliance with this specification, in addition to inspection by the subcontractor and with the design drawings. The contractor will review pre-placement conditions, placement of controls, and other job conditions during performance of the work.

The contractor will perform final inspection and acceptance of water diversion and control work.

1.2 REFERENCE DOCUMENTS

- (a) Health and Safety Plan (HASP) for the Remedial Action of Waste Area Group 1, Operable Unit 1-10
- (b) Comprehensive Remedial Design/Remedial Action Work Plan for the Test Area North, Operable Unit 1-10, Selected Sites.

1.3 SUBMITTALS

1.3.1 Procedures

A Storm Water Pollution Prevention Plan (SWPPP) is not required for this specific project. However, this specification provides information necessary to ensure proper procedures are followed with regard to potential impacts due to precipitation effects.

1.3.2 Certifications

The subcontractor will submit a letter to the contractor verifying conformance to the requirements identified in this specification within four work days after completion of the work specified herein.

1.3.3 Records

The subcontractor will submit all records of inspection to the contractor, within four work days after completion of the inspection.

PART 2 PRODUCTS

2.1 EQUIPMENT AND MATERIAL REQUIREMENTS

2.1.1 Equipment

- (a) All equipment and tools will conform to the safety requirements of the Project Health and Safety Plan (HASP)
- (b) All equipment and tools used by the subcontractor to perform the work will be subject to inspection by the contractor before the work is started and will be maintained in satisfactory working condition at all times
- (c) The subcontractor's equipment will be adequate and capable of controlling water prior to and throughout construction as required by this specification and the design drawings.

2.1.2 Materials

- (a) All materials will be furnished by the subcontractor and will be subject to approval by the contractor
- (b) Selection of materials used for controlling storm water are the responsibility of the subcontractor, but will follow the intent of the Storm Water Pollution Prevention Plan and be approved by the contractor.

PART 3 EXECUTION

3.1 GENERAL

3.1.1 All standing water outside the construction boundary may be left to infiltrate the soil.

3.1.2 The subcontractor will perform all construction work in areas free of standing water. Suitable water control measures will be constructed at all locations where construction work may be affected by ponded storm water at the time of work.

- 3.1.3 The subcontractor will divert surface water around the periphery of all construction areas by constructing temporary ditches, berms, or other appropriate means of control.
- 3.1.4 The subcontractor will be solely responsible for the protection of work against damage, delay, or environmental impact by water flow.
- 3.1.5 The subcontractor will direct and control water in a manner that protects adjacent structures and facilities.
- 3.1.6 The subcontractor will ensure that existing storm drainage is not impaired. The subcontractor will temporarily reroute existing storm drains affected by construction activities.
- 3.1.7 The subcontractor will at all times minimize the creation and emission of dust. The subcontractor will employ means such as water spray and visual observation to control and minimize dust. The source of water for dust suppression will be specified in the Request for Proposal, Special Conditions.

3.2 WORK IN EXTREME WEATHER

- 3.2.1 In the event of extreme storm activity, the subcontractor will provide protective measures to prevent damage to the work by run-on and maintain control of the run-off from the constructed areas. During extreme storm events, the subcontractor will protect slopes by methods approved by the contractor. Promptly after an extreme storm event, the subcontractor will inspect and clean out all temporary control structures of debris and sediment buildup, and repair or replace any damaged areas either in the temporary control structures or in the permanent work areas as approved by the contractor.

3.3 INSPECTIONS AND REPAIRS

- (a) The subcontractor will inspect temporary water control structures and materials on a daily basis and will record inspection findings in the daily work log. The inspection records will be submitted weekly to the contractor.
- (b) The subcontractor will remove debris and sediment build-up from the temporary control structures as required to maintain the intended flow path.
- (c) Should overflow or breach conditions be encountered or any other damage observed at the temporary structures, repair and/or replacement of the damaged area will be promptly performed by the subcontractor.
- (d) Acceptance criteria for repaired and/or replaced temporary water control structures will be in accordance with the requirements of this specification.

3.4 REMOVAL OF TEMPORARY CONTROL MEASURES

Temporary storm water control measures will be removed once the work has been completed and as directed by the contractor. The materials removed will be properly disposed of by the subcontractor, as directed by the contractor. All areas where temporary control structures are removed will be regraded and revegetated in accordance with Sections 02200 and 02930 of these specifications.

3.5 ACCEPTANCE

The subcontractor will submit a description of any repair or replacement work required to the contractor prior to implementation. Acceptance criteria for repaired or replaced water control measures will be in accordance with the original requirements of this specification.

END OF SECTION

SECTION 02200

EARTHWORK

PART 1 GENERAL

1.1 SCOPE OF WORK

1.1.1 Work Included

The subcontractor will furnish all materials, labor, tools, and equipment for all types of earthwork to be performed in accordance with this specification and as shown on the design drawings. Earthwork includes grading and excavation; placement of fill materials; placement of contaminated materials; disposal of unsuitable materials; and reclamation of borrow area.

1.1.2 Related Work Specified Elsewhere

- (a) Temporary Diversion and Control of Water During Construction will be in accordance with Section 02140 of these specifications
- (b) Grades, Lines and Levels will be in accordance with Section 02210 of these specifications
- (c) Excavating, Trenching, and Backfilling will be in accordance with Section 02222 of these specifications
- (d) Reclamation Seeding and Mulching will be in accordance with Section 02930 of these specifications.

1.1.3 Materials Procurement Notification

The subcontractor will follow the requirements of the General Conditions GC-2 and Vendor Data Schedule (VDS).

1.1.4 Work to be Performed by Others

The contractor will:

- (a) Review and approve data submittals as required by this specification
- (b) Review and approve results of quality assurance tests and surveying performed for compliance with this specification
- (c) Document and monitor corrective actions
- (d) Identify the acceptable onsite borrow locations
- (e) Have the option to approve all soil compaction equipment prior to use

- (f) Have the option to inspect and approve surface conditions prior to placement of each layer
- (g) Have the option to inspect and approve all materials prior to placement
- (h) Have the option to perform final inspection and confirm acceptance of earthwork.

1.2 REFERENCE DOCUMENTS

Occupational Safety and Health Administration (OSHA)

Code of Federal Regulations, Part 1926, Subparts P and G

INEEL Health, Safety and Hazards Prevention Documents

Health and Safety Plan (HASP) for the Remedial Action of Waste Area Group 1, Operable Unit 1-10

Hazards Prevention and Control Document, PRD-24

Comprehensive Remedial Design/Remedial Action Work Plan for the Test Area North Operable Unit 1-10, Selected Sites.

1.3 SUBMITTALS

1.3.1 Test Reports

The subcontractor will submit test reports at the following frequencies:

- (a) Field Placement Tests – Field tests that provide immediate results will be recorded in the Daily Field Report and presented to the contractor by the end of the same day
- (b) Field Quality Control Tests – Field tests that provide immediate results will be recorded in the Daily Field Report and presented to the contractor by the end of the same day.

1.3.2 Procedures

The subcontractor will submit a work plan describing the equipment, materials, and methods to be employed to meet the requirements of this specification to the contractor for approval 20 calendar days prior to commencement of work. The work plan will be formatted in accordance with the requirements outlined in the contract Special Condition titled Construction Work Plan.

1.3.3 Certifications

Prior to final acceptance of the work specified herein, the subcontractor will submit a letter to the contractor verifying conformance to the requirements identified in this specification.

1.3.4 Records

The subcontractor will submit to the contractor all field records from surveying, layout, and field inspection activities within four work days after completion of these activities.

1.4 QUALITY ASSURANCE

The subcontractor will comply with PLN-125 Quality Program Plan for the Environmental Restoration Program and submit within 10 work days after notice to proceed through the vendor data schedule a notice of intent to comply.

PART 2 PRODUCTS

2.1 EQUIPMENT AND MATERIAL REQUIREMENTS

2.1.1 Equipment

All equipment and tools will conform to the safety requirements of the Project Health and Safety Plan (HASP). All equipment and tools used by the subcontractor to perform the work will be subject to inspection by the contractor before the work is started and will be maintained in satisfactory working condition at all times. All soil compaction equipment will be inspected for acceptance by the contractor prior to the start of construction.

The subcontractor's equipment will be adequate and have the capability to perform the indicated earthwork specified herein.

All equipment brought to the site will be identified to the contractor prior to delivery and will be clean and free of grease and oil spots due to potential equipment contamination. Where applicable, tires will be in like-new condition, free of slits, and cracks. The contractor reserves the right to reject equipment not meeting these requirements.

2.1.2 Fill Material

Fill material will be native soils from borrow locations as designated on the drawings and will be generally free of plant material, roots larger than one inch in diameter, rubble, litter, insect infestation, and other deleterious matter.

2.1.3 Borrow Area Requirements

In situ topsoil will be removed and stockpiled at designated locations prior to the removal of borrow soils. Top soil will be obtained through the Operations and Maintenance contractor, as needed.

2.1.4 Topsoil

Topsoil borrow will be obtained from the Borrow Area at Test Area North and will meet the following requirements:

- (a) Be free of rubble, litter, insect manifestation, and other deleterious matter
- (b) Be free of rocks larger than three inches in diameter.

PART 3 EXECUTION

3.1 PROTECTION AND SAFETY

- 3.1.1 The subcontractor will keep all roads and parking areas adjacent to or part of this project usable at all times. The subcontractor will provide all necessary barricades, temporary walkways, lights, signs, signals, etc., for the protection of the workers and the public, as per the standards established by PRD-24 in the *Hazards Prevention and Control Manual* and Occupational Safety and Health Administration (OSHA), Construction Safety and Health Regulation 29 CFR, Part 1926, Subpart G, Signs, Signals, and Barricades, whichever of the two is more stringent.
- 3.1.2 For excavations, trenching, and shoring, the subcontractor will comply with Section 02222, Excavation, Trenching, and Backfilling.
- 3.1.3 The subcontractor will provide the necessary protection to prevent damage to existing structures and facilities indicated in the drawings or indicated by the contractor to remain in place. The subcontractor will restore damaged property to original condition, and obtain written approval from the contractor.
- 3.1.4 The subcontractor will clearly mark and post all laydown areas.
- 3.1.5 The subcontractor will mark or otherwise indicate the location of existing monuments and markers, and protect these structures before construction operations commence. The subcontractor will be responsible for the marking and/or protection of all necessary objects.
- 3.1.6 During earthwork operations, a representative of the subcontractor will be present at all times to observe and identify any areas requiring investigation. The subcontractor will notify the contractor immediately upon discovery of any field deviations from the drawings or this specification.

3.2 EXISTING UTILITIES

- 3.2.1 There may be existing utilities within the limits of the construction area as shown on the design drawings. Utilities will be identified by the contractor and the utilities protected by the subcontractor. The contractor will be immediately notified of the discovery of utilities not shown on the design drawings. The subcontractor will follow the guidelines for protection of utilities in accordance with Section 02222 of these specifications.

3.3 DUST CONTROL

- 3.3.1 The subcontractor will at all times during the activities minimize the creation and emission of dust. The subcontractor will employ means such as water spray and visual observation to control and minimize dust. Source of water will be specified in the Request for Proposal, Special Conditions.
- 3.3.2 The subcontractor will ensure that unpaved and haul routes are wetted while in use.

3.4 INSTALLATION OF FILL MATERIALS

3.4.1 General Requirements

- (a) Stockpiling of clean imported material will be confined to the subcontractor's laydown and storage area as approved by the contractor. Stockpiled materials will have stable slopes and be evenly graded and self-draining. Materials will be stockpiled in such a way that precipitation runoff can be monitored and controlled, if necessary, to prevent escape from the stockpile area. The subcontractor will ensure that the stockpiling and handling of contaminated surface soils, if encountered, are confined within the limits of the work area.
- (b) The subcontractor will place all materials to the lines, grades and elevations as shown on the design drawings as specified in Section 02210 of these specifications.
- (c) The subcontractor will not begin placement of materials until after acceptance by the contractor of the subgrade and placement conditions for all underlying material layers.
- (d) The subcontractor will not place materials on frozen surfaces, in standing water, or when materials contain snow, ice or frozen material.
- (e) The subcontractor will slope temporary grades to direct water away from the construction area to reduce the potential for ponding water. The subcontractor will provide erosion protection as specified in Section 02140 of these specifications.

3.4.2 Existing Grades

The existing grade will be prepared as required in Section 02110 of these specifications.

3.4.3 Fill Material

- (a) The fill material will be placed in loose lifts to attain a maximum compacted lift thickness of six inches.
- (b) Top soil will be compacted with a minimum of three passes of a sheepsfoot roller.
- (c) Fill material other than top soil will be compacted with a minimum of five passes of a smooth steel drum roller. In the event that significant silt or other fine grain material are involved, the contractor may direct that a sheepsfoot roller be used at no additional cost.
- (d) Subsequent lifts will not be placed until acceptance by the contractor of the previous lift has been received.
- (e) The borrow areas will be graded to minimize erosion and sustain vegetation. Reclamation seeding and mulching of the borrow areas will be in accordance with Section 02930 of these specifications.

3.4.4 Topsoil Layer

- (a) Place the topsoil with a moisture content that minimizes dust production
- (b) Place the topsoil in maximum eight-inch loose lifts
- (c) Place the topsoil layer with the minimal compaction obtained only from the normal passage of construction equipment that occurs during placement and grading operations.

3.4.5 Protection of Underlying Layers

- (a) The subcontractor will use placement methods which prevent undue disturbance and which maintain and ensure the integrity of the underlying materials. The subcontractor will submit, for written approval by the contractor, the construction method(s) proposed to ensure the protection of the underlying layers.
- (b) Previously installed layers or subgrades disturbed by subsequent construction operations by the subcontractor or adverse weather will be reworked to the required placement conditions specified herein and as otherwise approved by the contractor.

3.5 INSPECTION

- 3.5.1 The subcontractor will be responsible for preoperation, operation, and postoperation inspection during the performance of all work.
- 3.5.2 The contractor reserves the right to inspect all work for compliance with this specification.

3.6 ACCEPTANCE

The subcontractor will be responsible for documenting the number of compaction passes completed per lift. Placed materials not in accordance with the requirements of this specification will be repaired and/or replaced by the subcontractor. The subcontractor will submit a description of repair and/or replacement methods to the contractor for written approval before implementation. Acceptance criteria for repaired and/or replaced materials will be in accordance with the original requirements of this specification.

Areas that do not conform with the compaction specifications will be investigated by the subcontractor to determine the extent of the non-conformance. Areas that are of a different material type or that have failed the specifications after recompaction efforts will undergo additional testing regardless of the testing frequency guidelines.

Final acceptance will be explicitly detailed by survey locations, layer description, material type, and lift number or elevation. A final report to the contractor will be submitted by the subcontractor within 20 calendar days of the final acceptance detailing all field survey and quality control activities performed during the construction operations.